

**REMARKS**

**I. Status of the Claims**

Claims 16-37 are pending. By this Amendment, Applicant amends claim 21. Support for the amendment to claim 21 can be found in the originally filed specification and claims. No new matter has been added.

**II. Rejection Under 35 U.S.C. § 112**

The Examiner rejects claim 21 under 35 U.S.C. § 112, second paragraph. In particular, the Examiner alleges that the phrase "chemically, enzymatically or microbiologically modified soluble starch" is "vague and indefinite." Office Action at 2. Applicant respectfully traverses.

As Applicant has argued previously, the Examiner erroneously equates breadth with indefiniteness by stating "one of ordinary skill in the art would not be able to ascertain what compounds are encompassed by this phrase, as this phrase encompasses an innumerable amount of chemical possibilities and hence, compounds." Office Action at 2-3. However, Applicant submits that the number of compounds encompassed by "chemically, enzymatically or microbiologically modified soluble starch" is irrelevant in an analysis of definiteness under § 112, second paragraph. See M.P.E.P. § 2173.04. Because indefiniteness is not determined by breadth, what is relevant is "whether one of ordinary skill in the art would understand the bounds of the claim when read in light of the specification." *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

Here, the specification makes clear that the phrase means a starch, e.g., a starch extracted from natural sources, "which has been chemically, enzymatically, or

microbiologically modified so as to be soluble in water.” Specification at 6, lines 9-15. Thus, this unambiguous phrase means exactly what its plain meaning implies: a starch modified chemically, enzymatically, or microbiologically to be water-soluble. Further, the specification provides examples of starches that may be used, e.g., “wheat starch, corn starch, rice starch, potato starch.”

Nevertheless, to advance prosecution, Applicant has amended claim 21 so that the claim now explicitly recites that the starch is modified to be water soluble, wherein the modification is carried out chemically, enzymatically, or microbiologically. Accordingly, and in view of the foregoing remarks, Applicant respectfully requests the reconsideration and withdrawal of the rejection.

### III. Rejections Under 35 U.S.C. § 103

The Examiner rejects claims 16-37 over U.S. Patent No. 6,080,392 to Dupuis et al. (Dupuis I) in view of U.S. Patent No. 4,155,892 to Emmons et al. (“Emmons”) and in view of U.S. Patent No. 6,284,821 to Hüglin et al. (“Hüglin”), and with respect to claim 24, further in view of U.S. Patent No. 5,385,729 to Prencipe et al. (“Prencipe”).

Applicant respectfully traverses.

One of the requirements for a *prima facie* case of obviousness is that there be some suggestion or motivation in the cited references, or in the knowledge generally available to one of ordinary skill in the art, to combine reference teachings. See M.P.E.P. § 2143. Furthermore, the evidence of this motivation to combine must be “clear and particular.” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999).

In the present case, the Examiner has failed to make a showing that one of ordinary skill in the art would have been motivated to combine the teachings of the cited references to arrive at the presently claimed composition. In particular, the references do not teach or suggest their respective combination in order to achieve a composition comprising at least one nonionic amphiphilic associative polyurethane corresponding to formula (I), wherein one of the end groups is a C<sub>8</sub>-C<sub>18</sub> alkyl group and the other is a C<sub>1</sub>-C<sub>6</sub> alkyl group, and further wherein the composition is in the form of a gel. Moreover, even when all three references are combined they do not contain all the claimed elements of the present invention.

**A. Dupuis I**

Dupuis I teaches a cosmetic composition pressurized as an aerosol in the presence of a propellant and capable of forming a mousse, comprising, in a cosmetically acceptable medium, at least one associative polyurethane and at least one anionic polymer. Dupuis I does not teach or suggest a composition in the form of a gel, as required by the present claims. Furthermore, as argued of record, Dupuis I teaches a polymer having end groups R and R', which may be identical or different, and are both C<sub>8</sub>-C<sub>18</sub> hydrocarbon radicals.

In the presently claimed invention, one alkyl end group has 8 to 18 carbons and the other group has 1 to 6 carbons. See, e.g., claim 16. As admitted by the Examiner, Dupuis I does not disclose or suggest one end group being an alkyl group having 1 to 6 carbons, nor does it teach or suggest a composition in the form of a gel. Office Action at 4.

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**B. Emmons**

The Examiner resorts to Emmons (as well as Hüglin, discussed below) in an attempt to overcome the deficiencies of Dupuis I. She asserts that the end-capping carbon chains of Emmons' polyurethane comprise 4-20 carbon atoms, and the length of the hydrocarbon chain can be altered to obtain a preferred thickness. Office Action at 4. Applicant respectfully traverses for at least the following reasons.

First, the Examiner has offered no reason or proof that one of ordinary skill in the art would be motivated to combine Dupuis I and Emmons. The Examiner contends that "the polyurethane thickeners [in Emmons] are disclosed for use in cosmetic compositions" but offers no support, in Emmons, or elsewhere, for this contention. In reality, the disclosure of Emmons teaches the use of the thickeners almost entirely in latex paint compositions. The "suggestion" for use of the thickeners in "cosmetics and toiletries" relied on by the Examiner is sandwiched between a long list of industrial and toxic uses such as "the paper, leather and textile industries, oil well flooding compositions and drilling muds, detergents, adhesives, waxes, . . . and pesticidal or agricultural compositions for the control of insects, rodents, fungi, parasites of all kinds, and undesirable plant growth." Emmons, col. 14, lines 63-68. Such a disclosure is hardly a motivation to consider combining any teaching within Emmons with the cosmetic hair composition of Dupuis I.

Second, Emmons does not overcome the deficiencies of Dupuis I because it does not suggest what is required by the present claims, i.e., "one of the radicals  $R_1$  and  $R_2$  is an alkyl group having 8 to 18 carbons and the other group is an alkyl group having 1 to 6 carbons." See, e.g., claim 16. Applicant has thoroughly searched the reference

for the teaching of end-capping carbon chains with 4 to 20 carbon atoms, as identified by the Examiner, but has been unable to find it. At best, the reference discloses: "[t]he polymers will provide good thickening if the polyether segments have molecular weights of at least 1500 (preferably 3,000-20,000), the polymers contain, on the average, at least three hydrophobic groups and at least two water soluble polyether segments lining the hydrophobes, the sum of the carbon atoms in the hydrophobic groups being at least 20, preferably at least 30, and the total molecular weight is about 10,000-200,000, preferably 12,000-15,000." Emmons, col. 7, lines 6-14. But that portion simply does not suggest modifying the chain lengths of Dupuis I, such that one end group is an alkyl having 1 to 6 carbons and the other end group is an alkyl having 8 to 18 carbons. Rather, it merely discusses various interacting factors that affect the compositions disclosed by Emmons.

Thus, not only does the Examiner fail to point to any disclosures in Emmons that would suggest modifying the composition of Dupuis I, but the combination of the two references does not teach all claimed elements. The Examiner has not provided the "clear and particular" evidence required to support the combination. See *Dembiczak*, 175 F.3d at 999. The Examiner, therefore, cannot maintain that a person of ordinary skill in the art, having read Emmons' disclosure, would have been motivated to reduce the length of only one end chain of a compound disclosed in Dupuis I, in the manner presently claimed.

Furthermore, the present claims explicitly recite that the composition is in the form of a gel. Dupuis I, as discussed above, does not disclose a composition in the form of a gel. While Emmons appears to disclose that its thickeners may form a

"ringing" gel, it provides no motivation to change the composition of Dupuis I from the form of a mousse into the form of a gel. See Emmons, col. 15, lines 5-40. Thus, for at least the foregoing reasons, the present claims are not obvious over Dupuis I in view of Emmons.

**C. Hüglin**

The Examiner attempts to overcome the deficiencies of Dupuis I in combination with Emmons, specifically the mousse versus gel deficiency, by relying on Hüglin. According to the Examiner, it "would have been obvious to one of ordinary skill in the art at the time the invention was made to teach the composition of Dupuis in the form of a gel, as taught by Huglin [sic] et al. a) because Huglin [sic] et al. teach mousses and gels as interchangeable cosmetic hair-styling forms; and b) because of the expectation of achieving a composition that can be uniformly spread through the hair." Office Action at 5.

Applicant respectfully traverses. Hüglin does not teach a hair composition that can be both in the form of a mousse or a gel. Rather, Hüglin teaches a particular type of "stabilizer" compound, which can be used in various cosmetic forms. The compound taught in Hüglin in no way resembles formula (I) of the present invention. Thus, Hüglin does not suggest or motivate altering the composition of Dupuis I comprising compounds of formula (IV) from mousse into gel form. Thus, Hüglin does not remedy the deficiencies of the Examiner's attempted combination of Dupuis I and Emmons discussed above, and further, the combination also fails to render the present claims obvious.

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**D. Claim 24 and Prencipe**

With respect to claim 24, the Examiner admits that the combination of Dupuis I, Emmons, and Hüglin lacks styrene phosphonic acids and vinyl phosphonic acids. The Examiner relies on Prencipe for teaching compositions in the form of a gel, and because “[s]tyrene phosphonic acids and vinyl phosphonic acid units are disclosed as comprising a cross-linking polymeric thickening agent. Office Action at 6. Again, the Examiner’s proposed combination fails to make a *prima facie* showing of obviousness, and Applicant respectfully traverses.

First, there is no motivation to use any teaching from Prencipe, which teaches linearly viscoelastic cross-linked thickening agents, to arrive at the present invention, which is based on associative polyurethane thickening agents. One of ordinary skill in the art would know that thickening via cross-linked thickening agents involves covalent bonding, whereas associative polymers are “capable of reversibly associating with each other or with other molecules or particles.” Specification at 1. The fact that Prencipe may teach a composition in gel form is not enough motivation for one to seek out, let alone apply its teachings, when the chemistry of the composition is different from that of the claimed invention. As noted in the present specification, “[t]he thickening and/or gelation of aqueous media with polymers has been an important subject of cosmetic research for a long time.” Specification at 1, lines 9-11.

Moreover, Prencipe does not remedy the deficiencies of Dupuis I alone, or in combination with Emmons and Hüglin. Accordingly, the disclosure of gels, which are well-known, without a concomitant suggestion or motivation to combine or modify the

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compositions of Dupuis I, does not render the pending claims obvious. See, e.g.,  
M.P.E.P. § 2142.

Based on at least the foregoing remarks, Applicant respectfully requests that the  
rejections be withdrawn.

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**CONCLUSION**

In view of the foregoing amendments and remarks, Applicants respectfully request the reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account no. 06-0916.

Respectfully submitted,

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